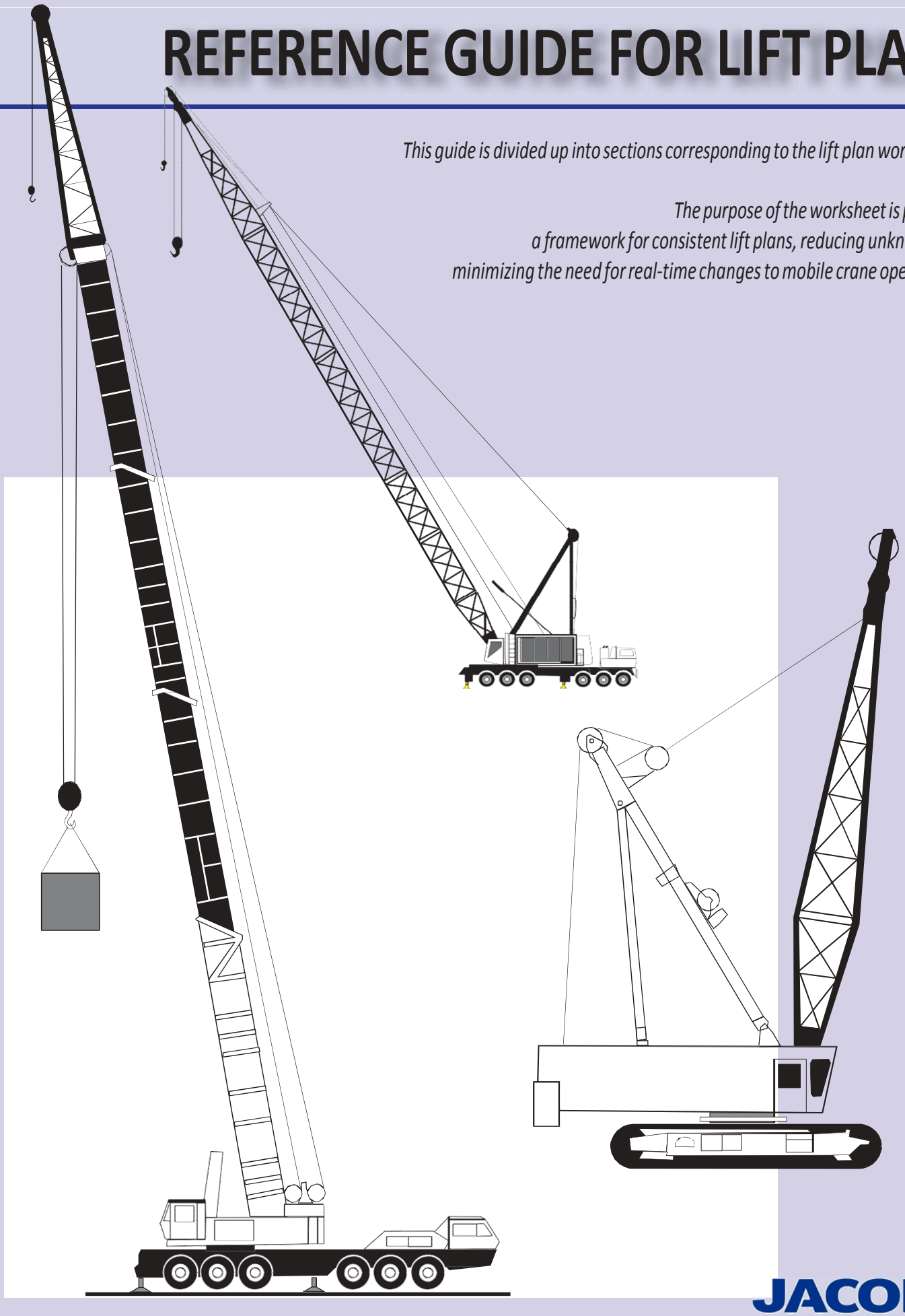
REFERENCE GUIDE FOR LIFT PLAN

This guide is divided up into sections corresponding to the lift plan worksheet.

The purpose of the worksheet is produce a framework for consistent lift plans, reducing unknowns & minimizing the need for real-time changes to mobile crane operations



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Fill out each lift plan worksheet completely and provide all required supporting documents to expedite the review of the proposed lift plan

Section 1

Please fill out completely. *Note: Any changes in the crane configuration, placement, rigging lifting, lifting scheme or calculations may require that a new Lift Plan be developed.*

Project Name:

Company Name: Date:

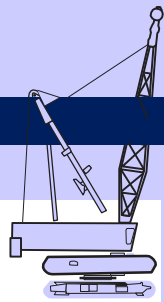
Location of Lift:

Specify the project name as described in the contracting documents.

Specify the major facility the operation will take place and where, with reference to the facility the operation will take place.

Section 2

Description of Lift: *(Goal of operation, how operation will be performed, where it will occur)*



Provide: A summary of what is the goal of the operation. How the operation will be performed. Where it will occur.

Section 3

Please Check Off & Include the Following Documents:

- ☐ Written Lift Description (above)
- ☐ Orientation of Crane to the Load - sketch
- ☐ Sketch showing C/G of Load - side view
- ☐ Overhead view of Operation - sketch
- ☐ Rigging sketch w/component detail
- ☐ Spreader Beam / Lifting drawing (w/engineering)
- ☐ Layout Plan
- ☐ **CRANE'S LOAD CHART, WITH APPLICABLE WEIGHTS HIGHLIGHTED ATTACHED.**

Purpose: provide documents to the lift plan. The sketches may be hand drawn. The operation area sketches should show the dimensions of the crane's foot print and relative distances to pick up and set points. The rigging sketches should show sling lengths, angles and capacities of components including attach points.

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Section 4

Crane Configuration

Crane Manufacturer_____ Model/Serial or equipment # _____

Hoisting Point: ☐ Main Boom ☐ Jib ☐ Extension ☐ Aux. Boom head

Hoisting: ☐ Over side ☐ Over front ☐ Over rear

Set Up: Boom assembly requirements Assist Crane Required? ☐ Yes ☐ No ☐ Attach Lift Plan

Layout Area Required Length _____ Width _____

Outrigger or track positions: ☐ Extended ☐ Mid ☐ Retracted ☐ Tires ☐ Pick & Carry

Boom Length (ft.): _____ Boom Angle (deg): _____ Jib or Extension Length (ft.): _____ Offset: Angle _____

Set up space requirements

Outrigger or track position

Boom length and angle are where crane is at its minimum capacity during the operations.

Specify hoisting point

Quadrant of operation

Section 5

Determining Gross Capacity (from Load Chart)

Max Load Radius: ft. or Angle_____ Pick-up: ft. or Angle_____ Set-down: ft. or Angle _____

Crane Capacity at max. Radius: Over rear (lbs):_____ Over side (lbs):_____ Over front (lbs): _____

Maximum boom length for operation (ft.): _____

Required Counterweight: Weight (in lbs): _____

Gross Capacity:

Provide the most limiting gross capacity based on the boom length and radius at the pick-up or set-down locations whichever is more limiting.

List radius in feet or boom angle depending on which the manufactures uses in their capacity chart.

Section 6

Hoist Capacity

Rope diameter & type:_____ Wire rope limit (in lbs):_____ Line pull per part: _____

Number of parts: _____

Hoist Capacity:

List the diameter and type of wire rope either the crane manufactures designation or the wire rope construction.

List the number of parts of line.

Provide the limits of the hoist system based on most restrictive combination.

List the line pull based on the layers of wire rope on the drum usually the last unless special circumstances exist.

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Section 7

Rigging

Rigging connection to load: ☐ Fixed point ☐ Free connection Connection point capacity: _____

Lifting beam/Spreader required: ☐ Yes ☐ No Sling Material:_____ Sling Size/Capacity:_____ No. of slings: _____

Minimum sling angle (deg):_____ Beam/Spreader capacity:_____ Maximum force on sling legs (lbs): _____

Type of Hitch: ☐ Basket ☐ Choke ☐ Vertical Connecting hardware capacity (lbs): _____

Is the load capable of absorbing the additional lateral loading? ☐ Yes ☐ No Total Rigging weight:

The purpose of this section is to identify the rigging element that has highest loading as a percent of that components capacity.

Fixed points are eyebolts, hoist rings, or pad eyes.

Free connections are Slings choked around the load or used in a basket hitch.

Will the load be able to absorb the compressional loading imparted by load angle factor?

Rated capacity of connection on the load

List load on sling carrying maximum force

Rigging weight includes weight of slings, connection hardware, chain falls or come-a-longs and lifting/spreader beam weights.

Section 8

Total Gross Load

Total Deductions from Capacity

Wire rope in excess of rated capacity for lift (ft.): _____

Wire Rope below Grade (ft.): _____ **Wire rope weight**:

Net Load Weight

Load weight include method of determining load weight, if estimated - specify estimator, if measured - specify scale type:

☐ Estimated By Whom: _____

☐ Measured / Scale: _____

Deductions

Block Weight:	
Over Haul Ball Weight:	
Auxiliary Boom Head:	
Ext. or Jib Weight:	
Main Hoist Line Wt:	
Aux. Hoist Line Wt:	
Rigging Weight:	
Total Deductions ⚠	lbs

Net Load _____ **+ Deductions** _____ **= Total Gross Load (TGL)** _____ *

***TGL** _____ **÷ Rated Capacity** _____ **= Capacity margin** _____ **%**

The weight of the load to be lifted

Load weight must be determined prior completing this form

The amount of wire rope that extends below the surface that the crane is set up on.

Based on Load Chart or Hoist Capacity, whichever is less

Specify the name of the person performing the load weight estimation.

Parts of line in excess of capacity, wire rope below grade, wire rope not in use are all typically accounted for as load. Some manufacturers consider all wire rope beneath boom and jib points as load.

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Section 9

9. Area of Operations

Crane ground bearing pressure (psf.): _____ Outrigger matting / blocks req: ☐ Yes ☐ No

Matting necessary for ground conditions (dimensions): _____ Wheel mounted crane: Traveling w/boom erected? ☐ Yes ☐ No

Max Boom Length for Travel (based on Manufacturers limitations): _____

Clearance from Overhead Obstructions (ft.): _____ Swing Clearance: ☐ Greater than 2 ft.

Head room requirements: _____ Head room remaining: _____ Overhead Powerlines: ☐ Yes ☐ No

Headroom is the height of the structure and projections (guardrails, HVAC units where the load is going to or coming from plus the load, rigging, and load block heights subtracted from boom point elevation. All these elevations should be provide with the supporting documents.

What is the maximum ground bearing pressure the crane will produce with proposed matting

Will the crane need to travel with the boom erected and what is the maximum length allowed by the manufacturer for this operation

Is the crane within one extended booms length of overhead power lines

Matting necessary based on the maximum load that the soil or surface is capable of sustaining without subsiding. Underground utilities that could affect surface bearing capacity should be identified to allow proper crane placement and matting selection. Note: Outrigger or crawler mats should be hardwood or another material that is sufficient strength and thickness to distribute the cranes load evenly across the mats total area.

Section 10

Wind Limitations

Record Crane wind restriction from the load chart: _____ Maximum wind allowable with load: _____

This value typically reflects the maximum wind allowed with no load

This value calculated the sail area of the load and reflects the maximum wind allowed that will not exceed the side load limits specified by the crane manufacturer

Section 11

Crew

How many personnel are required, what are their jobs, where will they be located, and what actions should they take in the event of foreseeable emergencies?

Lifting Supervisor: _____

Signature: _____